

AMATEUR RADIO

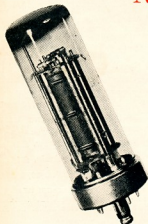
DECEMBER
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AMATEUR RADIO

Published by the Wireless Institute of Australia,
Law Court Chambers, 191 Queen Street,
Melbourne, C.1

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ADVERTISING REPRESENTATIVE FOR N.S.W. AND QUEENSLAND:

L. W. CRANCH,
Room 302, 17 Bond St., Sydney.
Telephone: BU 3879.

PRINTERS:

"RICHMOND CHRONICLE,"
Shakespeare St., Richmond, E.1.
Telephone: JB 2419.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.1, on or before the 8th of each month.

Subscription rate in Australia is 9/- per annum, in advance (post paid) and A10/6 in all other countries.

Wireless Institute of Australia
(Victorian Division) Rooms' Telephone is FJ 6997.

EDITORIAL

The spirit of goodwill always associated with Christmas apparently has already reached the shores of Western Australia. Federal Executive appreciates the sentiments expressed in a letter received from the Federal Councillor for VK6 so much, that it feels constrained to throw aside all modesty and publish herein the contents thereof.

"I don't doubt that Federal Executive will agree that its efforts and work generally receive more kicks than compliments, and it is therefore with considerable pleasure that I carry out the instructions of this Division in conveying to your Executive collectively and individually our thanks and commendation for your work in the interests of Amateur Radio.

"It is realised, also, that much of the work is on behalf of remote Divisions and concerning matters which can have little direct interest to you but to which, nevertheless, your Executive devotes considerable energy and time, the latter item being a charge on that elusive and scarce commodity known as spare time, to say nothing of the time which it must be necessary on occasions to extract during business hours.

"We also feel that to your Executive and its predecessors should go the credit for the transition, particu-

larly in the post-war period, of Divisional outlook from a purely State to a wider Commonwealth plane. In this lies much of the strength of our organisation, and we wish you continued success."

Federal Executive extends its heartfelt thanks to VK6 Division for its complimentary and gratifying gesture; but feels that in reality it is the wholehearted support accorded by the Divisions in general, and remote Divisions in particular, that has made it so easy and pleasurable to carry out the wishes of Federal Council.

As the activity of the Divisional Council is the barometer to the interest being taken by the individual members in the activities of the Division, Federal Executive is able to gauge the degree of interest in each Division, and quite naturally reacts favourably to the stimuli. From now until Easter, Federal Executive will be busy collecting, from the Divisions, material for inclusion in the Agenda for the Twentieth Annual Convention. If each and every member includes amongst the list of New Year Resolutions a pledge to put forward at least one constructive suggestion, then we will all have a Happy Christmas, a Bright and Prosperous New Year, and a large Easter Egg.

FEDERAL EXECUTIVE WISHES YOU ALL THE COMPLIMENTS OF THE SEASON.

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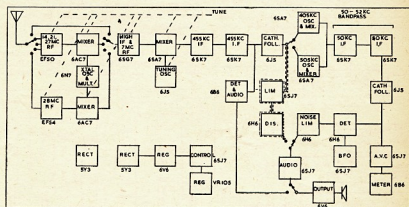
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Central 4311

A Triple Conversion Receiver

The receiver described in this article was commenced about two years ago, and at that time it was intended that it should include every worthwhile feature from an Amateur's view point. Just what can be classified as a "worthwhile feature" undoubtedly varies from Amateur to Amateur, and in fact the Writer's opinion on this point has changed more than once since commencing the construction of the set. Also in s.s.c. transmission and reception, we have an Amateur technique that was not in use two years ago. Nevertheless, there are certain fundamental requirements for an Amateur receiver that are not debatable. Notable among these are stability and selectivity.

6.536 to 8.655 Mc. over 47 revolutions of the tuning knob, and without too much trouble it was possible to make it fairly linear, that is its average of 45 Kc. per revolution is very nearly the actual figure for each revolution.



tuning range being 6.991 to 9.110 Mc., that is 455 Kc. higher than the osc. frequency.

Mc. (6.991 + 6.200 to 9.110 + 6.200).

21 Mc.—The second harmonic of the crystal frequency is used, i.e. 12.400 Mc., which gives a tuning range of 19.391 to 21.510 Mc.

27 Mc.—The third harmonic is used, i.e. 18.600 Mc., which gives a tuning range of 25.591 to 27.710 Mc.

28 Mc.—A crystal frequency of 5.212 Mc. is multiplied four times to give a frequency of 20.848 which provides a tuning range of 27.839 to 29.958 Mc.

On the 14, 21 and 27 Mc. ranges, there is second channel interference from the 6.2 Mc. crystal, which appears at 13.310, 19.510, and 25.710 Mc. All of these frequencies are far removed from Amateur Bands, and are therefore of no consequence. On the 28 Mc. range the fourth harmonic of the v.f.o. appears at about 28.4 Mc., and this frequency is inside the band and is a nuisance. However extensive by-passing and shielding reduce its intensity to a fairly

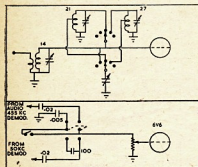


Fig. 2a (above) and 2b (below)

The arrangement of the switched coils (Fig. 2a) for the 14, 21 and 27 Mc. bands is unconventional. The antenna is coupled in only through the 14 Mc. coil, which remains in circuit all the time. Other coils are switched across it as shown, to reduce the inductance.

When the 455 Kc. demodulator is connected to the output stage, the single throw toggle switch (Fig. 2b) is used to connect a condenser from grid of the 6V6 to ground, thus removing some of the highs. When the 50 Kc. demodulator is connected to the output stage, the same switch is used to place a 0.0001 uF. condenser in series with the 0.02 uF. coupling condenser, thus greatly attenuating the low frequency response.

This is a definite advantage for c.w. and for copying those phones in which there is no appreciable low frequency attenuation at the transmitter. The high frequencies are cut so much in passing through the 50 Kc. i.f. stages, that many signals are almost unintelligible unless this condenser is used. On the other hand, if the lows are sufficiently attenuated at the transmitter, results are better without this condenser in circuit.

low value, and as it is the fourth harmonic of the v.f.o., it tunes four times as fast as does any external signal being received. There are no other spurious responses.

Before deciding on the 455 Kc. i.f. finally adopted, 1600 and 2000 Kc. were tried, as also was having the oscillator frequency 455 Kc. higher than the signal frequency. However, in each of these cases there was much trouble from spurious signals. Considerable trouble was experienced also on the 28 Mc. range with unwanted signals beating with what turned out to be the 5th, 6th, and 7th harmonics of the 5.212 Mc. crystal. This was overcome by making use of two loosely coupled circuits tuned to the 4th harmonic in the harmonic amplifier, as shown in the diagram.

The wavetrap shown is essential only on the 14 Mc. range, and it is completely effective.

The single-sideband section of the receiver is adapted from the unit described by J. L. A. McLaughlin in "QST" of October, 1947, the special inductances required being made by Kingsley Radio. This portion of the receiver has been somewhat disappointing, however, the reason most likely being that the 50 Kc. band-pass amplifier is not correctly aligned. For all that the 50 Kc. i.f. channel would be worth

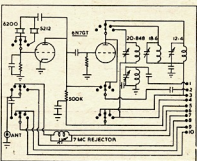


Fig. 3.—Crystal Oscillator Stage.

Designations:—

- 1—To 28 Mc. mixer grid.
- 2—To 14, 21, and 27 Mc. mixer grid.
- 3—B+ to 14, 21, and 27 Mc. r.f. and mixer.
- 4—B+ to 28 Mc. r.f. and mixer.
- 5—B+ from supply.
- 6—To input of 7 Mc. stage.
- 7—To input of 14, 21, and 27 Mc. stages.
- 8—To input of 28 Mc. stage.
- 9—To 14, 21, and 27 Mc. mixer plate.
- 10—To 28 Mc. mixer plate.

The crystal oscillator uses one section of a 6N7GT in a Pierce circuit (Fig. 3). The other section is used as a multiplier. The oscillator operates with very low plate voltage. The switches shown above are ganged with the coil switches in the r.f. and mixer stages for the 14, 21 and 27 Mc. bands.

while even without the selectable sideband feature, as the increase in selectivity it gives is very considerable.

In fact the selectivity is such that some phone signals are almost unintelligible unless a means is provided to attenuate the lower audio frequencies, and thus provide a better balanced audio signal. At a later date it is hoped to replace this part of the receiver by the single-sideband unit described in "Ham News" of Nov.-Dec., 1948, and this is one reason for the inclusion of the regulated power supply.

The portion of the receiver indicated by dotted lines has yet to be added. Otherwise the receiver is complete, and has been working for several months with very good results.

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A Simple A.M.C. Circuit That Really Works

BY B. E. CABENA,* VK3KF

This system has been in use at the writer's QTH for the last twelve months and during this time a number of requests have been received for circuit data. It was therefore thought desirable to send in an article to this magazine for publication.

For the benefit of readers who may not be very conversant with automatic modulation control, a short explanation of its principles will not be out of place. It is analogous with the a.v.c. system used in receivers in that some of the incoming signal is rectified, filtered and the resultant d.c. applied to the grids of the tubes in the stages whose gain is to be controlled.

The method of achieving this however, is somewhat different in that with audio amplifiers, in order to obtain effective control, it is necessary to tap off portion of the audio signal from the plate of the stage preceding the one to be controlled and feed it to a separate amplifier stage, or stages, the output being rectified and then passed through a filter to eliminate the audio component. The resultant voltage is thus pure d.c. and it is equal in value to the average value of the audio signal.

This voltage, when applied to the grids of the tubes to be controlled increases or decreases the bias in proportion to the average variations of the input signal to the amplifier. This means that the output of the amplifier remains substantially constant with relatively large variations in input signal. It will also be found that signals above a certain amplitude (depending on the amount of automatic control used) will not be amplified. This naturally applies only to the controlled stages. This gives the effect of clipping, but without noticeable distortion.

From the above it will be seen that a.m.c. enables the modulator gain control to be set at a much higher level than would be the case if a.m.c. were not used. This of course means that the carrier can be more deeply modulated, the limiting action of a.m.c. preventing side-band splatter. Experiments with the circuit shown indicate that the system responds to audio peaks of quite short duration.

The first attempts at a.m.c. utilised a 6U7G as controlled tube with control voltage applied to both the signal and suppressor grids, but results were very unsatisfactory. After consulting the A.R.R.L. Handbook it was decided to build up the circuit shown using the 6L7 tube in the controlled stage.

Results were much better, in that the a.m.c. was more effective, but not yet

good enough and also the stage gain was so low that the modulator, using 807s in AB₂, had not enough output to show any signs of modulation on a 38 watt carrier when listening on the monitor. Some modifications were therefore made and the circuit shown finally arrived at.

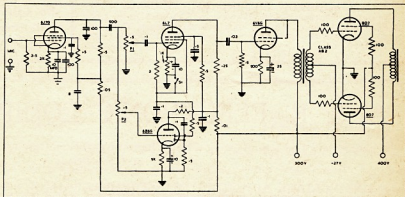
The modulator now has enough output to fully modulate a transmitter of 76 watts input, the gain control being at maximum and the a.m.c. control about 15° from zero. When the a.m.c. is then switched out, the carrier is overmodulated.

It might here be mentioned that there seems to be no reason why the penta grid or heptode converter tube should not be used instead of the 6L7, in fact, tests made by the writer on the control effects of grids number one and four on type 6A8 tube seem to support this view. The oscillator plate would, of course, be earthed.

be used, if at all, but it is a good idea to be able to switch out the a.m.c. if only for comparative tests.

First set P2 to zero, then adjust P1 for 100% modulation and advance P2 until speech clipping is audible. It will then be necessary to back off the latter control to the point where clipping just commences, i.e. just noticeable on peaks. Now you will have to increase the gain a bit to get back to 100% modulation; once again back off P2 slightly to avoid severe clipping. The above adjustments were carried out without the aid of a c.r.o., a check being obtained from a local Ham.

During the time that the writer has had this system in use, not one report of distortion has been received, but when asked for a report on quality, the answer has always been "very nice quality indeed OM." There is no reason why you should not have the same success.



The main point as regards the construction of the unit is to make the layout such that the leads around the a.m.c. circuit are kept as short as possible, otherwise instability may occur. The only lead that was found to be rather critical was from the plate of the first stage, but no trouble will be experienced if the coupling condenser C is connected straight to the plate pin on the socket. The value of C was selected to give the best results when using crystal mikes, type JT30; but with dynamic and carbon mikes it may be desirable to increase the capacity to about 0.02 μ F.

Adjustments of the a.m.c. P2 is quite simple. It should be mounted on the panel with the gain control P1, so that it is easily accessible. This also applies to the a.m.c. on/off switch. S1. It will be found that the latter will very seldom

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The Victorian Division A.O.C.P. Class will commence on Thursday, 12th January, 1950. Lectures are held on Monday and Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with Secretary W.I.A., Victorian Division, 191 Queen St., Melbourne (Phone FJ 6997 from 9 a.m. to 6 p.m.), or the Class Manager on either of the above evenings.

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Disposals Genemotors as A.C. Motors

BY L. W. WALLBRIDGE,* VK5UX

Some Hams who have purchased disposals equipment containing genemotors may not have considered the possibility of using these as a.c. motors.

The genemotors suitable for this conversion have both field and armature of laminated construction and they have

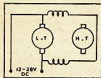


Fig. 1.

one set of field coils (consisting of a few turns of heavy wire) which are common to all windings.

Figure 1 shows how the genemotors are probably wired when purchased.

Figure 2 shows the alteration necessary to obtain a series a.c. motor by placing the field in series with the h.t. winding. (Use the lowest of the h.t. windings if the genemotor has two h.t. outputs.)

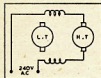


Fig. 2.

The trouble with the series motor as shown, is that it attains dangerously high speeds on no load because the

field strength is weak and, for the same reason, the torque of the motor is low. Because of this latter characteristic, the machine quickly slows down and stops on any but the lightest loads.

If we increase the current flowing in the fields, the speed of the machine drops slightly, but the torque is increased. A cheap and effective method of doing this is to place a lamp across the motor as shown in Figure 3.



Fig. 3.

A switch will give a choice of two speeds. This idea can be carried further by using a bank of lamps, each with its own switch, to give a wide variation in speed (and torque). If a heavy-duty variable resistor is used in place of the lamps to vary the speed, precaution must be taken to prevent a short-circuit occurring across the machine.

AN IDEA

Ever short of a couple of points on a terminal strip?

A couple of brass paper fasteners in suitable holes solders easily and can be bent to suit the needs of the user.

TRADE REVIEW

Messrs. R. H. Cunningham & Co., Australian Factory Representatives for Stratton & Co. Ltd., manufacturers of "Eddystone" components and equipment, advise that a vibrator unit is now available for the 640 Communications receiver.

The unit has been designed to permit operation of the "640" Receiver from a 6 volt accumulator, although it may be used with any receiver or other equipment, the h.t. consumption of which is not more than 65 Ma.

The unit comprises a transformer, fuse, non-synchronous vibrator, rectifier (6X5G), on/off switch, pilot light and the necessary filters to prevent r.f. interference. Smoothing is not included since the choke and condensers fitted in the receiver perform this function. A heavy cable is provided for connection to the battery, and a lead terminating in an octal plug, for fitting direct to the socket provided on the "640" Receiver. The unit is totally enclosed in a small metal cabinet, finished a smooth ripple black. The consumption from a 6 volt battery is between 5 and 6 amperes, dependent on load. Catalogue number is 687 and the price is £15/19/5 plus tax.

Stocks of the 669 "S" meter have now arrived, priced at £7/5/- plus tax. Both of these units are available from all "Eddystone" distributors.

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Restricting Speech Range in Speech Amplifiers

This is a case of where you can get something for nothing, or at least, close to nothing. Before giving the punch line, though, let's examine the situation from the beginning.

Phone stations on the Ham Bands seem to fall into three categories regarding their speech quality. The first are the stations that will have no audio equipment in the shack unless it is capable of a flat response from 20 cycles to 15,000 cycles. Their quality is superb, and your ears would tell you so if it were possible to have a receiver and a reproducing system capable of handling this audio range at a time when propagation conditions allowed undistorted reception. These Amateurs are taking up needless space in the limited Ham spectrum by their activities, but as long as their carrier is inside the band edge by twenty to twenty-five kilocycles (in order to keep those wide sidebands inside the band) then, the P.M.G. will not bother them, at least not yet.

On the other extreme is the second group, small though it be. These Amateurs wish to have a transmitter that is as effective, communication-wise, as possible. Those who are on a.m. phone tailor their speech amplifier equipment until it transmits the narrowest possible audio range, leaving only enough audio range for complete understandability. A more rabid group goes even further, by partially eliminating the carrier and then transmitting only one side band. These Amateurs deserve a lot of applause, but we need not bother to applaud them, because they did this not for applause, but because they want their money's worth out of their equipment.

Which brings us to the third group, which must certainly include the majority of the world's phone men. This group is made up almost entirely of Mr. Average Phone Man and others of his ilk. Mr. Average Phone Man has a speech amplifier and a modulator which he copies faithfully from some handbook or some radio magazine. When he finished the audio end, he connected it to his c.w. rig, got on the air, and asked the first Ham he contacted the age-old question, "How's my modulation?" Aside from the fact that Mr. Average Phone Man should have checked his modulation with a scope, while transmitting into a dummy load, instead of depending on the advice of another Mr. A. P. M., this situation is quite normal and is to be expected.

WHY WASTE POWER

All right, you say, this is old stuff, so where's the pitch? Here it is. Why continue to waste power by transmitting certain audio frequencies if these audio frequencies are unable to help the other fellow hear you, especially when you can almost get rid of these unwanted

high and low frequencies at practically no cost? To be specific about cost, the change can be made by the use of four 600 volt paper or mica condensers.

Before explaining how and where to put which condensers, let's make certain that another point is clear. This article has nothing to do with speech compressors, speech clippers, or sharp cut-off low-pass filters. The latter will do an excellent job of tailoring the speech range, but these filters may be rather elaborate. Speech compressors and speech clippers, on the other hand, do not affect in any way the band-pass characteristics of an amplifier unit. They may, however, affect the fidelity from a distortion stand-point. This is especially true of speech clippers.

One other point might also be explained here. The changes to be described are suitable for practically any type of speech amplifier. However, a restricted band-width is not assured if these changes are made in an amplifier which is used for n.b.f.m. If the swing is not carefully adjusted, the band-width may still be excessive. In other words, it is worthwhile to make these changes in an n.b.f.m. speech amplifier, but the effect will be nullified if the signal is permitted to swing too far frequency-wise, due to improper adjustment.

AN ECONOMICAL METHOD

Here, then, is what you may do to restrict the audio range of your speech amplifier in an economical way. First, attenuate the low audio frequencies by changing the value of two of the inter-stage coupling condensers and second, attenuate the high audio frequencies by adding a condenser from plate to ground on two of the audio stages.

The calculations to determine the proper size of condenser for each point are not difficult. It is first necessary to decide on the audio range you wish to cover. Let us assume that you want an audio characteristic which is down somewhat at 300 cycles on the low end and 3,500 cycles on the high end. To be more exact, this is one which will be down 6 db at 300 and 3,500 cycles when changes are made to two of the stages. These two frequencies—300 and 3,500 cycles—will be used in the calculations.

The next step is to examine the circuit diagram of your speech amplifier. Most amplifiers consist of a pentode pre-amplifier, driving a triode or pentode amplifier, driving a phase inverter or transformer coupled amplifier which in turn drives the output stage. We are interested only in the first two tubes. We want to put a condenser from the plate of the first tube to ground, and one from the plate of the second tube to ground. Also, we wish to change the values of the condensers which are

between the plate of the first tube and the grid of the second tube, and between the plate of the second tube and the grid of the third tube.

If the third tube is a phase inverter, it is best not to attempt to change the coupling condenser between the second and third tubes. The reason is beyond the scope of this article but it might be necessary to change the grid circuit of the phase inverter in order to get the proper effect from the changed coupling condenser. In this case, the coupling condenser can be changed between the microphone and the input tube. This is completely satisfactory if a dynamic microphone is used. If a crystal microphone is used, a different approach is necessary. Again this is not within the scope of this article, so that you will have to be satisfied with changes on only one tube instead of two.

The final step before starting the calculations is to check the value of the grid resistor to which the new coupling condenser will connect. This will be the grid resistor for the second and third tubes unless, as stated above, it is necessary to put one coupling condenser between microphone and grid, in which case examine the grid resistors for the first and second tubes. These resistors should be no greater than 250,000 ohms. If they are of a greater value, decrease them so they are 250,000 ohms or less. Incidentally, the grid resistor for the second tube is usually the gain control.

CALCULATION OF COUPLING CONDENSERS

The proper value of coupling condenser will now be one whose capacitive reactance, at 300 cycles, is equal to the grid resistance in the grid circuit of the stage to which it connects. These words mean, simply, that the condenser value in micro-farads is equal to—

$$\frac{1,000,000}{(1884) (R_g)}$$

where R_g is the value of the grid resistor in ohms. This assumes that the low frequency point selected was 300 cycles. The figure of 1884 is 300 times 2 times pie. As an example, if the grid resistor is 250,000 ohms, the condenser should be 0.0021 , so use a $0.002 \mu\text{F}$ condenser. Make this calculation for both stages, and replace your present coupling condenser with the calculated value of condenser if it is not already that value. The low frequency audio tones are now taken care of.

CALCULATION OF PLATE BY-PASS CONDENSERS

Before starting the calculation of the plate to ground condensers, find out the plate resistance (R_p) of the two tubes involved. Most handbooks have this

figure. Next, check the circuit diagram and get the value of the plate load resistor which you are using. This is the resistor which connects directly to the plate at one end and is by-passed to ground (and connects to B+) at the other end. Next, get the value of grid resistor on the tube which follows the tube whose value of R_p you just looked up. Now, calculate the effective parallel resistance of these three factors, that is, of R_p , the plate resistance; of R_i , the plate load resistance; and R_g , the grid resistance, by the formula:—

$$\frac{1}{R_t} = \frac{1}{R_p} + \frac{1}{R_i} + \frac{1}{R_g}$$

For example, assume that a 6J5 tube uses a plate load resistor of 50,000 ohms. The plate resistance of a 6J5 is approximately 7,000 ohms. Assume also that the grid resistance of the next stage is 250,000 ohms. The effective resistance of these three in parallel is 5,990 ohms. Call this R_t for the 6J5 stage. Incidentally, the R_g for triodes is low, as shown above. For pentodes, R_g will be very high.

The proper value of shunt condenser to connect from plate to ground is one whose capacitive reactance, at 3,500 cycles, is equal to R_t . Stated again, simply, the value in micro-farads is:—

$$\frac{1,000,000}{(22,000) (R_t)}$$

This assumes that the high frequency point selected was 3,500 cycles. The figure of 22,000 is 3,500 times 2 times

pie. As an example, if R_t is 5,990 ohms, then the plate to ground condenser calculates out to be 0.0078 μ F., so use a 0.0075 μ F. condenser. Connect it to the plate of the tube and to a convenient ground point. Make this calculation for both stages. This takes care of the higher frequency audio tones.

Let us now examine the change we have brought about in the speech amplifier and also examine what we have gained from this change. To do this, we shall have to assume that the response of the speech amplifier, before the change, was fairly uniform from 150 to 6,000 cycles. This is the sort of response which might be expected in a speech amplifier, following general circuit practice. In addition, the response was probably only five or six db down at 100 and 10,000 cycles.

When you used your speech amplifier, before the change, you were modulating your carrier with all the complex audio tones that existed in the microphone output, over the 100 to 10,000 cycle range. Your sideband power, which is all that the other Ham is using to hear your signal, was therefore spread over a wide frequency range. It so happens that it takes a fair amount of modulator power to transmit the lower and higher frequency audio components which are not necessary for intelligibility.

By making the change in your speech amplifier, you now still have the same power in your side-bands, assuming that the percentage of modulation is the same, but you now have a great

deal more power available to transmit the range of frequencies that really count, those between 300 and 3,500 cycles. Effectively, therefore, you have a "louder" signal, because you have increased power at the audio frequencies to which the other Ham listens. In round numbers, the increase in signal strength is about 6 db, which is the same as a four to one increase in carrier power, or the same as putting up an antenna with a 6 db gain over the one you were using.

To get an idea of the response curve which is obtainable, let us look at a speech amplifier which uses, for example, a 6SL7 dual triode for the first two stages, driving a third stage which has a 250,000 ohm grid leak. Assume that the aforementioned changes have been made. Now let us apply a pure tone at 1,000 cycles, the mid-band frequency, and measure the output of the speech amplifier. Next, apply a pure tone of 300 cycles. The output will be down 6 db, or four to one in power. The same thing is true for a 3,500 cycle tone. A pure tone at 150 cycles (and at 7,000 cycles) will be down 14 db, or twenty-five to one in power.

Thus, while the curve obtained is not of the sharp cut-off variety, it will give essentially the same results, and will certainly sound the same to the ear. Further, it was obtained at practically no cost.

The foregoing article was extracted from G.E.'s, "Ham News," July-August, 1949.

GENUINE RADIO CLEARANCE

TRANSMITTERS, RECEIVERS—

Type 1196, 3-9 Megacycles, crystal controlled, four frequency selector, 9 valves: 1-EF50, 1-VT52, 2-VT501, 2-VR56, 2-VR53, 1-VR57, 1-VR55. Brand new, complete with motor generator and valves; 12 volt, £7/7/-; 24 volt, £6/6/-.

Type 1366, 17-20 Megacycles, 6 valves: 3-EF50, 1-6KBG, 1-CV51, 1-EA50; one 2 gang and one 3 gang condenser. Complete with valves, less power supply, excellent condition, £5.

Type 101, 4.2-6.6 Megacycles, 8 valves: 2-1C7, 2-1K7, 4-1K5. Complete with valves, power pack, cables, headphones, and microphone. Excellent condition, £10/10/-.

Type A.P.N.2, U.H.F., 18 Valves: 7-6AC7, 1-6V6, 1-964, 1-9U4, 2-6SL7, 1-6SN7, 3-956, 1-2C26. 24 volt blower motor, coils, I.F.T.'s, complete with valves, brand new, £10/10/-.

Type No. 11, 4.2-7.5 Megacycles, 9 Valves: 1-807, 2-1M5, 2-1C7, 4-1K7. Complete with power pack, leads, and microphone. Excellent condition, £12/10/-.

Type 1133, 100-124 Megacycles, English equivalent to the SCR522. 16 Valves: 1-VT61, 2-VT60, 2-VR53, 1-VR54, 2-VR57, 3-VT52, 2-VR55, 2-VR56, 1-VS110. Excellent condition, £8/10/-.

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Weston Electric V.H.F. 4 Valve Midget, 234-258 Megacycles. Valves: 3-954, 1-955. Super regenerative Receiver. Brand new, £5.

Type 1082, equivalent of AR14. Complete with valves, 2 gang condenser, vernier dials, transformers, resistors, 2 coils, etc., £3/15/-.

Type 3109 H.F., 8 Valves: 2-EA50, 2-VR65A, 2-VR135. 24 volt input, 480 volts 40 Ma. output. Motor generator, good condition, £3/15/-.

Motor R (Emergency Receiver 500 Kc.). Complete with valves and headphones in watertight carrying case. Operates from 2 volt accumulator, 45 volts B battery. Valves: 3-VP23 (R.F. pentodes), £2/10/-.

Bendix Type MN26-6 Radio Compass Receiver, 12 Valves, 150-1500 Kc. Will make an ideal receiver for Boat, Car or Home. £12/10/-.

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1K7G	10/6
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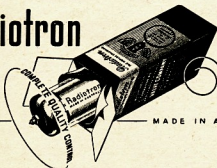


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Checking Crystal Frequency with the Type 3 Mark II.

Regulation 136 states that the Amateur should listen on his own frequency to ensure that the channel is clear before calling.

This is particularly difficult to observe in portable work with the Type 3, and sometimes inconvenient, even at home. Here is a simple dodge which provides a neat solution for Type 3 users.

The idea is to switch on the crystal oscillator while in the "receive" position, and tune in the oscillator signal with the b.f.o. switched on. This is done in the following way:—

Immediately behind the 6L6 valve is an r.f. choke (L9) and a 0.002 uF. condenser (C11C), to the junction of which two leads are connected. One goes to the T-S-R switch and the other to the two screens via their appropriate resistors. Separate the 6L6 lead from the EL33 screen lead, and connect it to the T-S-R switch lead, leaving the EL33 plate and screen leads isolated.

Attach a resistor (about 50,000 ohms) to the 250 volt line, and connect a two-way switch so that one side goes to this resistor, one side to the original T-S-R switch lead and the centre to the EL33 lead. You will now find that this two-way switch will cut the crystal oscillator in or out when in the "receive" position without affecting normal operation when in the "off" position.

Crystal activity can be checked (switch position 3) and frequency determined without placing the transmitter on the air.

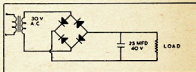
—H. REID, VK3RH

Cheap Rectifiers for Relay Operating Voltages

A recent advertisement indicated that a well known firm had for sale "MU4 Metal Rectifiers, 12 volt, 50 Ma." at a price of one shilling each.

No information was available locally on the type, so I asked for, and was supplied, with six.

One of the six was marked "BE2-1-1/5 MU4" and some inquiry elicited the information that "BE2-1-1/5" was used in an Army type 122 receiver as a "crash limiter."



On breaking open the tropic proofing, it was found that two lugs were soldered together and, as a result, d.c. would flow in either direction through the unit.

Detaching the wire from the centre tap and wiring four units in a bridge supplied with 30 volts a.c., provided a d.c. supply of 28 volts which has been tested to load at 80 Ma. for over an hour without any trace of warming up. I have put mine into use at a load of about 80 Ma. for three relays, and it is giving satisfactory operation.

—S. LAIDLER, VK5TL

THE OLD MAN

The other day I heard a prominent Amateur putting on a turn over the air but he had received a Pro Forma from his local Radio Inspector. What he said about the fellows who are on the Amateur Advisory Committee made interesting listening. This chap felt quite sure that somebody had a grudge against him and a personal one at that. He just could not have been guilty of spluttering, etc., etc. I was very amused to hear the station he was working tell him that he WAS spluttering at that moment.

Why is it that you fellows take umbrage when that Pro Forma arrives? Is it because your dignity is hurt, or is it because you just can't take it? Surely it's better to receive a note from the Advisory Committee than to receive one from the Department. It is only one of your fellow Hams trying to do his bit to improve the bands and you can't deny they certainly can do with some improvement.

Let us take heed with what is happening in the States at the present moment and if we can continue to discipline our own bands it is far better than the Department doing it, THEY might suggest that you cease operation for a period. The Experimental Advisory Committee only ask you what steps you have taken to overcome the difficulty.

Talking of splutterers, they are still with us. VK2OQ, VK6DD, VK2ABA,

VK5YQ and VK2AED were all taking their share of the band with a couple of others thrown in. If you fellows could see the band width you were occupying, I feel sure that your conscience would prick you very deeply.

VK2AED, it was a pity to list you because your phone was outstanding with perfect quality, spoilt only by the whiskers emanating from your sidebands.

There are still the few who want to be different in designating their call letters, and I heard VK4 Kilowatt Sugar, VK6 Nothing Doing, and a fellow who designated HIS call letters as **I'm a Queen**, with a great giggle after each announcement. I have purposely omitted his State prefix, after all if you wish to advertise the fact to the general public, I see no reason for giving you publicity for that statement.

It is nice to see that some fellows can admit they were wrong, and I congratulate you, VK6 Mike King.

VK2DG was heard with key clicks extending over a goodly portion of the band. It might pay to investigate this OM. It could have been a parasite, I couldn't make up my mind on this.

The worst phone of the month was VK6HW with bad quality and a horrible ripple. Why can't you chaps, when told your phone is bad, immediately switch off and do some testing with a dummy aerial and a phone monitor? A phone

monitor will tell you that your quality is good or bad.

The long CQ merchants on c.w. are still about and VK3CG and VK4PO were heard sending endless CQs with an occasional call sign thrown in for luck. Listen to the fellows who really work DX and you won't find them cluttering up the air with useless CQs. They invariably CQ twice or three times and then send their call, which after all is what the DX station is trying to get.

"The P.M.G.'s. Handbook for the Guidance of . . ." lays down very definitely that you must sign on and off when your carrier is put on the air. Yet how often do we hear a carrier come on and a voice say "You there Bill?" On comes another carrier with "Yes, Harry, let's look for Jim," and so on ad infinitum. Take heed fellows, the Department view this practice very seriously and you may be heard by somebody who is not on the Advisory Committee, but is being paid to do his spot of listening. Cheers until next month.

— . . . —

QUESTIONS AND ANSWERS

VK3RH would like to know: What is the correct (practical) manner of joining lines of different impedance, e.g., 70 ohm co-ax to 300 ohm line? Practical details please.

A MERRY CHRISTMAS AND A HAPPY NEW YEAR TO HAMS

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★ **A. & R. MODULATION TRANSFORMER.** MT15 Semi-Universal Modulation Transformer suitable for Class AB1, AB2 or current 150 Ma. per side of centre tap; maximum d.c. current in secondary, 150 Ma.; working voltage insulator, 1,000 volts d.c. primary and secondary windings. This transformer is fitted with silver plated spark gap which provides against the development of excessive peak voltages in the event of the removal of the secondary load during transmitter adjustments, etc.. Available impedances 3,800 ohms to 10,000 ohms primary and secondary. Price to Amateurs £7/19/3 (tax inc.).

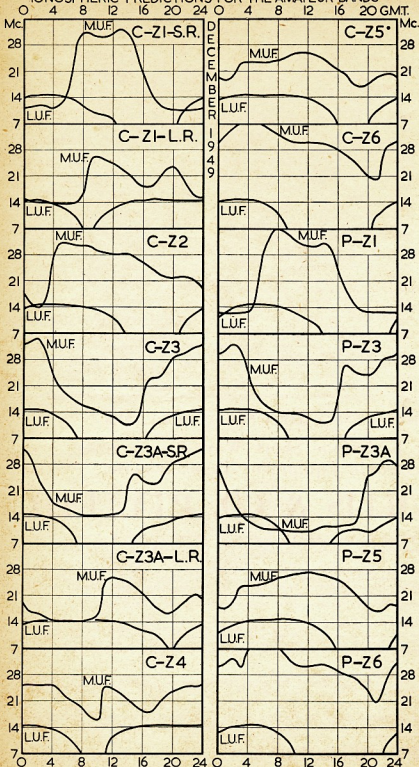
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IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS



IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

DECEMBER, 1949

The accompanying charts have been prepared by the Ionospheric Prediction Service of the Commonwealth Observatory. The first set of the series was published in the November, 1948, issue of this magazine, together with an article explaining the nature of the forecasts and how to use them. Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

The Canberra charts refer to the following world zones:—

Zone	Region	Terminal
1	Western Europe	London
2	Mediterranean	Cairo
3	N.-West America	San Francisco
3a	N.-East America	New York
4	Central America	Barbados
5	South Africa	Johannesburg
6	Far East	Manila

The forecasts have actually been prepared for point-to-point circuits between Canberra and the overseas terminals mentioned in the above table. It is, however, to be expected that the charts will provide an approximate indication of ionospheric conditions for all Amateur contacts from South Eastern Australia to the various world zones.

The Perth charts are similar to those based on Canberra. No forecasts are given from Perth to Zones 22 and 24 for the current month, as chart P-22 would be essentially similar to chart P-21, while chart P-24 might be unreliable due to auroral activity in high northern latitudes.

USE OF CHARTS

All that is necessary in using the charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum usable frequency (m.u.f.) of the F region of the ionosphere but above the lowest useful frequency (l.u.f.) for the desired contact. In two cases, Zones 1 and 3a it is necessary to consult both the short-route (S.R.) chart and the following long-route (L.R.) chart.

QUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular, answers to the following questions on the Canberra-Mediterranean circuit would be useful:

1. Were conditions good on 7 Mc. from 1400 to 2100 hours G.M.T.?
2. Was the 14 Mc. band workable from noon to midnight G.M.T.?
3. Was the 28 Mc. band workable for several hours before Greenwich noon?

Answers to the Quiz should be sent to the W.I.A. and should, if possible, refer to consistent results obtained on the majority of days in the month.

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Further details of any of the above products may be obtained from our distributors or by writing direct.

The dates of the B.E.R.U. Contests for 1950 have been advanced for the first time, to the latter half of January. This has been done partly in order to avoid clashing with other International Contests and partly to permit the effective use of those bands which, later in the year, might be of little value for world-wide communication.

RULES FOR TRANSMITTING CONTESTS

1. The event will be divided into four sections, namely:—
- (a) Senior telegraphy (150 watts maximum input).
 - (b) Junior telegraphy (25 watts maximum input).
 - (c) Senior telephony (150 watts maximum input).
 - (d) Junior telephony (25 watts maximum input).

2. The contest periods will be as follows:—

Sections (a) and (b) from 1700 G.M.T. January 14, 1950, to 1700 G.M.T. January 15, 1950, and from 1700 G.M.T. January 28, 1950, to 1700 G.M.T. January 29, 1950.

Sections (c) and (d) from 1700 G.M.T. January 21, 1950, to 1700 G.M.T. January 22, 1950.

3. The contests are open to all British subjects living within the British Empire and British Mandated Territories and to British Occupational Forces operating properly authorised stations, who are fully paid-up members of either the R.S.G.B. or one of the British Empire Societies. All entrants agree to be bound by the Rules of the Contests.

4. Entrants who are not members of the R.S.G.B. must certify in the declaration that they were fully paid-up members of their local society at the time of the Contest.

5. An entrant not located in one of the prescribed Prefix Zones shall be considered as being in the Prefix Zone nearest to his station.

6. Contacts with ships or unlicensed stations located in countries where licences are obtainable will not be permitted to count for points. The decision as to whether a station is to be classed as unlicensed will rest with the R.S.G.B. Contests Committee.

8. Entrants must provide their own log sheets which, together with the analysis sheet and declaration, must be legibly written or typed as set out in the sample appended.

9. All entries must be posted within eight days of the close of the contest and bear postmarks dated not later than January 30, 1950, in the case of Telephony and Receiving Contests, and February

6. 1950, in the case of the Telegraphy Contest. No entries will be accepted by the R.S.G.B. Contests Committee, New Ruskin House, Little Russell St., London, W.C.1. later than May 8, 1950.

10. The judging of entries will be carried out by the R.S.G.B. Contests Committee. The Council's decision will be final in all cases of dispute. No correspondence can be entered into regarding any decision made by the Council or Contests Committee.

11. Operation is restricted to the following bands:
3.5, 7, 14 and 28 Mc. (This rule excludes the use
of the 1.8, 21 and 27 Mc. bands and frequencies
above 30 Mc.) The Telegraphy Contest is open
for type A1 (C.W.) transmission only and entrants
receiving consistent tone reports of less than T8
will be disqualified. The Telephony Contest is open
for type A3 (amplitude modulated telephony)
transmissions only.

12. The conditions laid down in the entrant's licence must be observed. The input to the valve or valves delivering power to the aerial must not exceed 150 watts in the Senior Sections, or 25 watts in the Junior Sections.

13. Only one ~~contact~~ contact with a specific station may be made on each band during the contest.

14. Fifteen points will be scored for the first contact on a specific band with a British Empire station located in any Prefix Zone outside the competitor's own zone. Fourteen points will be scored for the second contact on the same band with the same zone, thirteen points for the third contact, and so on, to the fifteenth contact, which contact will score one point. All contacts with that particular zone on that band thereafter will count one point each. This scoring procedure will be repeated on each band to encourage multi-band

15. Serial numbers must be exchanged and acknowledged before points may be claimed for a contact. The serial number of 5 or 6 figures will be made up of the RS (telephony) or RST (telegraphy) reports plus three figures which may begin with any number between 000 and 400 for the first contact and which will increase in value by one with each successive contact: e.g. 287 for the first contact, 288 for the second contact, etc.

1. The Receiving Section will be concerned with telephony only and will run concurrently with the Telephony contest as given above.
2. The scoring system will be the same as for the transmitting sections, viz.: fifteen points will be scored for the first station heard on a specific band within any Prefix Zone outside the competitor's own zone. Fourteen points will be scored for the second station heard on the same band in the same zone, and so on. This scoring procedure will be repeated on each band to encourage multi-band

3. Before points can be claimed, the following information must be logged: (a) Call of station heard; (b) Call of station being worked; (c) Entrant's report on the signals of the station heard (RS); (d) The Serial Number given by the station heard to the station being worked.

5. The same station may only be logged once on each band during the contest.

BRITISH EMPIRE SOCIETIES

Amateur Radio Club of India.
Canadian Amateur Radio Operators' Association.
Canadian Section A.R.R.L.
Hong Kong Amateur Radio Transmitters' Society.
Jamaica Amateur Radio Club.
Malta Amateur Radio Society.
Montreal Amateur Radio Club.
Newfoundland Amateur Radio Association.
New Zealand Association of Radio Transmitters.
Southern Rhodesian Amateur Radio Society.
Radio Society of East Africa.
South African Radio League.
Wireless Institute of Australia.

B.E.R.U. Contest, 1960.....Section

Name (block letters).....Call sign.....
Address
Transmitter
Input power to last valve.....
Receiver
Aerial Systems used.....

[illegible]

SENIOR SECTION PLACINGS—

1	-VK3DI*	2365	Points
11	-VK2EO*	1901	..
12	-VK6URU	1802	..
14	-VK3VK*	1722	..
19	-VK2RA	1509	..
20	-VK5PH	1504	..
24	-VK4UR	1340	..
32	-VK3GW	1231	..
39	-VK3KU	1080	..
44	-VK3CN	955	..
45	-VK5OI	945	..
51	-VK4RF	828	..
53	-VK3YD	749	..
54	-VK3YC	606	..
63	-VK3HZ	607	..
74	-VK3PL	438	..
76	-VK3AC	415	..
77	-VK6LD	394	..
80	-VK5DQ	318	..
82	-VK3OW	100	..
87	-VK3OJ	42	..

	Points
2-VK2QL	1186
5-VK47Y	1066
9-VK3UM	868
10-VK5RX	849
12-VK2ZC	624
14-VK3TX	501
18-VK5XB	128

4-BE.R.S.-195 1525 Points
Check Logs were received from VKs 2DG, 2RX,
3CX, 3RJ, 5KO, and 5MO.

* Prefix Zone Certificate.

I hereby certify that my station was operated strictly in accordance with the rules and spirit of this Contest, and I agree that the decision of the Council of the R.S.G.B., shall be final in all cases of dispute.

Date..... Signed.....
If an entrant is a non-member of the R.S.G.B., he must sign the following additional Declaration: I hereby certify that at the time of the Contest I was a fully paid-up member of.....

Date: _____ Signed: _____

The entry form for this contest should be prepared on the lines set out above with the following amendments:—

Column 2: G.M.T. station heard.
Column 4: Station heard.
Column 5: Entrant's report on station heard.
Insert new column: Station being worked.
Column 6: Serial number given by station heard to station being worked.

Prefix Zone	... Mc.		... Mc.		... Mc.	
	Contacts	Points	Contacts	Points	Contacts	Points
AP. VU2. 4, 5, Y97						
DL3. G. GC, GD, GI,						
GM, GW						
MB9. MD1. 2, 7 (ZC4),						
MP2. ZB1.						
MD4 (VQ6). M13. ST						
VE1. 2						
VE3. 4						
VE5. 6						
VE7. 8						
VE2. 3, 7						
VE4. 5						
VE5. 8						
VK9. VR4						
VO						
VP1. 3, 7, 9						
VP2. 3, 4, 6						
VPS. VK1						
VQ1. 2, 4, 5, ZD6						
VQ2. ZE						
VQ8. 9, ZC2						
VR1. 2, 3, 5, 6, ZB, ZM						
V81. 2, 4, 5						
V86						
V89. VUT. MF4						
ZD1. 2, 3, 4, 7, 8, 9						
ZL1. 2, 3, 4						
ZS1. 2, 3						
ZS4. 5, 6, 7, 8, 9						
Totals						

NOTE.—Some of the above prefixes may be out of date at the time of the Contest.

Make sure you have read the Rules carefully and do not forget to sign the declaration at the foot of the form.

Suggestions for future contests are invited.

The A.R.C.I. takes great pleasure in announcing the rules and details of the first International DX Contest which is open to all Amateurs in the world.

1. The contest is open to licensed Amateurs throughout the world. Certificates of merit will be awarded to the first three leading stations and also to the leading stations of each prefix zone provided at least three entries have been received from the zone in question.

2. Entries must be posted within seven days of the close of the contest and must reach the QSL Bureau, A.R.C.I., P.O. Box 6666, Bombay 20, not later than 26th March, 1950, marked "A.R.C.I. DX Contest No. 2."

3. The decision of the A.R.C.I. Contest Committee will be final in all cases of dispute.

5. The contest will be open for phone and c.w.

contacts; 20 per cent bonus will be awarded for each two way c.w. contact.

Continued on Page 24)

FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

REAL DX

October was certainly a most interesting month for 50 Mc. enthusiasts, particularly in N.S.W. and Queensland. As reported in these columns last month, on 9th October JAZZAZ heard and was heard by VK2AM and JAZG. THEN A 2030 HOUR S.E.A.S.T. ON 20th October, VKZARG WORKED KH6PP, who was RS 57.9 and Bob (ZARG) RS 55.7. This was the result of patience and continuous effort. The band conditions at the time were negative, i.e. no beams, etc., were heard.

JAZZAZ was also hard on 9th October by VK4VU between 2055 hours and 2130 hours, but signals were weak and JAZG was also heard. On 10th October at 1845 hours and VK4FN whilst on the same date VK4ZU and VK4RY heard KH6PP. KH6PP and KH6NS had been heard earlier at 58 between 1315 and 1500 hours by VK4HR.

ZL 2AA was heard by VK3VW at 1115 hours on the 29th October. W9ZHA and W9ZHL were heard at 1000-1020 hours on the 28th October by VK3ARG.

2GU heard a W on the 29/10/49. ZL1HP and ZL1DE were heard at 0830 hours on 30th October by VK2AH, but on the 2nd November, KH6PP and KH6NS were worked for an hour by VKZARG. Followed by KH6PP by VK2WJ and VK2AH. They were audible from 0905 hours to 1049 hours. KH6NS was having difficulty to hear the VKs and was worked by VK3ARG and VK3XX and it's thought KH6NS worked VK3VW. QSB was bad and long fades were taking place towards the end. During this break through, an unidentified W was heard by VK2ARG. Phone, m.c.w., and c.w. were used.

Q4AE was heard by VK4HR and a carrier the same day by VK3VW—0600 hours 14/10/49.

The band opened to Newcastle area for VK5 at 0930 on 14th November. VK5RT, but Sydney contacts were patchy and few.

Lightning can do strange things. At Palm Beach on the 3rd November the lightning struck VK3ARG's 12 metre beam which the lower of three beams of all metal construction except for wooden element centre pieces. The wood charred and the reflector was damaged vertically. Fortunately all antennas were grounded so no gear was damaged. This being part of a freak storm which struck Sydney, first with a dust storm, then heavy rain and electrical discharges.

It has been noted that freak weather occurs after severe magnetic disturbances and there was a "black out" in communication systems for several hours after the time the RH6 was in. The 120 metre band was dead during the break through and as Major 2RU says in November "A.R." "Sporadic E" prevents the return to earth of reflected F2 stuff, so reducing the m.f.t. Ten metres started to listen up about 11 a.m.

The value of c.w. is apparent, providing your receiver oscillator is stable (p.d. note). Keyed carrier with a.m. tone and i.f. tone modulated sound f.h.

Incidentally, v.h.f. news is broadcast on 50 Mc, not 50.4. The VK3 v.h.f. gang have set a fine example by clearing the low frequency congestion on the 50 Mc. band and don't forget to tune above 51 megacycles. Please note that the recent break throughs are stations using the LOW END, so be yourself and everybody by keeping the low end as clear as possible. Perhaps local contacts should be made on higher frequencies! In any case 50 Mc. more power is being used for 5 and 10 mile contacts. Some justification can be said for it as break throughs are always on the cards.

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VICTORIA

50 Mc.—At the time of writing the 50 Mc. band has just started to open for Interstate work. On the 5th of November, 4HR, N.S.W., RT, 3C, 4BT and 2AIE appeared on the band between 1740 and 2030 hours and worked a large number of VK3 stations. Signals were very good with peaks well over 50 and these VKs who made contact will have added substantially to their marathon scores.

During October the band was rather quiet, although it was well watched after hearing of the exploits of VK3K and VK4S with RH6s and JAZs. However none of this DX has been heard in VK3.

The warmer weather has been attracting stations out portable again and we hope this form of work will continue through the summer. On the field day on the 29th November, 3CI and 3ANW were portable at Mt. Fatigue, near Foster, and 3ANW was at Mt. Dandenong; all stations had quite a number of contacts.

During the month 5GF paid a visit to Melbourne and worked quite a number of stations using his mobile rig. 3ARE, of Geelong, has converted a 522 for 50 Mc. and should be on for two way work before this appears. 3VF, of Drysdale, is also interested in 50 Mc. and these chaps can be assured of a warm welcome on the band.

On the 30th of October, 3UI and 3CI went portable to Mt. Major, near Dookie. 3UI worked a number of Melbourne stations and heard 2PN of Tumut, over a distance of 160 miles. Conditions did not appear to be as good as on previous occasions and possibly due to the windy weather, and Alan hopes to be more successful with the VKs next time he goes out. The next field day will be on Sunday the 11th of December. There is no restriction on bands used and it is hoped that all those with 50, 144 and/or 576 Mc. portable gear will be able to go out.

144 Mc.—The population of this band continues to grow with new stations 3DY, 3RV, 3TG, 2VM, and 3RK appearing. Due to lack of time, the writer has not been able to get details of the gear. The first three stations has not been obtained yet. However 3VM is using a transmitter consisting of 646 oscillator-treiber, 1A5S detector, 6AR5 and 832 final, modulated by a single 6AQ5. This rig has been designed for portable work and puts out a good signal. 3RK uses a 322 transmitter and a 6AR5 receiver, modulated to use the front end. Aerial is a dipole and Ben has already been able to work 3VF and 3AKE.

3AKE and 3VF are still very active and the number of Melbourne stations they can work is steadily increasing. Signals have been varying somewhat, being best after a warm day and worst during wet weather.

On the 29th of October, stations out were 3CI, Mt. Fatigue; 3ANW, Mt. Dandenong; 3AKE and 3VF, on high ground near Geelong; and 3VL at Red Hill was on over the week-end using 3IM's gear. Many contacts were had by all those on the band and in most cases signals were very good. 3CI worked 3ANW, 3VL and 3AKE both at home and portable. 3CI was able to get through to Melbourne after getting out by 3ED. 3AKE and 3VF worked 3CI and a large number of Melbourne stations as did 3ANW and 3VL. Altogether good work was done, although the poor weather prevented some of the other stations with portable gear from getting out.

3ED, of North Esser, has put up a 4 over 4 beam and is getting very much better results than previously, and several other stations have this type of beam under construction.

3RX, of Colac, is using a 3 over 3 beam and a 522; he has contacted 3AKE and worked 3ZL crossband with 82L on 144 and 3HX on 50 Mc. Ron hopes to work into Melbourne before long.

On the 30th of October, 3CQ queried portable as the home to home DX record at the time of writing. 3DA has also worked 3SW in Box Hill, at 7 miles, and 3ANW has worked 3Q0 at 10 miles.

In all cases signals have been between S5 and S7. These paths are not line of sight and those who have made the contacts must be congratulated on the efforts they have put in getting gear well enough to make these QSOs possible.

3XA has received 89 signals from 3RR at Mac-Cree over a distance of about 100 miles, and this also is a very good effort. On the 9th of October, 3ANW, portable at Mt. Dandenong, in teeming rain worked 3XA, 3Q0, and 3ABA.

T.C.C. 1.5 uF. 4,000 v.w. Condensers, £2 each.

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FEDERAL, QSL, and DIVISIONAL NOTES

Federal President: W. R. Gronow VK3WG; Federal Secretary: W. T. S. Mitchell, VK3UM, Box 2621W, G.P.O., Melbourne.

NEW SOUTH WALES

Secretary—Dick Down (VK2RP), Box 1754, G.P.O., Sydney.

Meeting Night—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney.

Divisional Sub-Editor—L. D. Cuffe, VK3AM, 14b Watson Street, Neutral Bay, N.S.W.

Zone Correspondents—North Coast and Tablelands: P. A. H. Alexander, VK3FA, Hill St., 144-145, Darlinghurst, N.S.W.; Newcastle: H. Whyte, VK2AHA, Vale St., Birmingham Gard., Newcastle; Coalfields and Lake: H. Hawkins, VK3YL, 27 Comfort Ave., Cessnock; Western: J. Russell, VK3QA, 116 Bogan St., Nyrangan; South Coast and Southern: H. B. Rayner, VK2DO, 42 Pettit St., Yass; Western Suburbs: C. C. Pearce, VK2ABE, 45 Harralbrook Ave., Five Docks; Eastern Suburbs: H. Kerr, VK3AX, No. 4 Flat, 144 Hewlett St., Bronte; North Sydney: L. D. Cuffe, VK2AM, 17 Military Rd., Mosman; St. George: J. A. Ackerman, VK2ALG, 32 Park Rd., Carlton; South Sydney: V. H. Wilson, VK2YV, Cr. Wilson St. and Marine Pde., Maroubra.

VICTORIA

Secretary—C. C. Quin, VK3WQ.

Administrative Secretary—Mrs. O. Cross, Law Court Chambers, 191 Queen St., Melbourne, C.I.

Meeting Night—First Wednesday of each month at the Radio School, Melbourne Technical College.

Zone Correspondents—North Western: R. E. Treble, VK3TL, 122 Victoria St., Berang; Western: C. C. Waring, VK3YW, 12 Skene St., Stawell; South Western: W. H. Ross, VK3UT, Ballangrich, via Moorabool; North Eastern: J. A. Miller, VK3ABG, "Erinvale," Avenel; Far North-Western Zone: Harry Dobson, VK3MF, 42 Walnut Ave., Mildura; Eastern Zone: Mrs. P. M. Churchward, VK3US, "Shirley," Red Hill.

FEDERAL

DX C.C. LISTING

This month we list the complete members of the DX C.C. as follows—

PHONE

VK3JD (1)	..	..	..	36	130
VK3GK (4)	..	..	..	37	123
VK3RU (2)	..	..	..	37	123
VK3BD (3)	..	..	..	37	120
VK3DD (5)	..	..	..	112	
VK3ZD (10)	..	..	..	102	
VK3JP (8)	..	..	..	102	
VK3LN (11)	..	..	..	102	
VK3G (5)	..	..	..	100	
VK3JE (7)	..	..	..	100	
VK3KS (9)	..	..	..	100	

New Members

VK4JP (8)	..	..	..	102	
VK3KS (9)	..	..	..	100	
VK3EE (10)	..	..	..	108	
VK3LN (11)	..	..	..	102	

C.W.

VK3BZ (6)	..	..	..	40	157
VK3CN (1)	..	..	..	40	143
VK3VW (4)	..	..	..	39	154
VK4EL (9)	..	..	..	39	154
VK2QL (5)	..	..	..	40	132
VK3KB (10)	..	..	..	39	158
VK3ER (5)	..	..	..	40	115
VK4HR (8)	..	..	..	40	119
VK4RP (11)	..	..	..	35	118
VK4D (2)	..	..	..	38	112
VK4TD (7)	..	..	..	38	112
VK3FL (15)	..	..	..	37	109
VK3UM (12)	..	..	..	36	108
VK2GW (16)	..	..	..	38	107
VK4RO (13)	..	..	..	106	
VK4R (18)	..	..	..	104	
VK3AP (14)	..	..	..	101	

New Members

VK7LZ (17)	..	..	..	111	
VK3RU (18)	..	..	..	104	

OPEN

VK3BZ (6)	..	..	..	40	178
VK3DI (2)	..	..	..	40	159
VK3RU (9)	..	..	..	39	158
VK3JE (12)	..	..	..	39	153
VK3HG (3)	..	..	..	40	146
VK3C (7)	..	..	..	40	146
VK3RM (13)	..	..	..	39	144
VK3MC (5)	..	..	..	39	138

WI BROADCASTS

All Amateurs are urged to keep these frequencies clear during, and for a period of 15 minutes after, the official Broadcast.

VK2WI.—Sundays, 1100 hours EST. 7196 Kc. and 2000 hours EST. 7104 Kc. No frequency checks available from VK2WI.

VK3WI.—Sundays, 1130 hours EST. simultaneous only on 3580 and 7198 Kc. and re-broadcast on 505 and 144 Mc. bands. Intra-State working frequency 7185 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

VK4WI.—Sundays, 0900 hours E.S.T. simultaneous on 3740 and 7198 Kc., 14348 Kc., 52.4 Mc. and 144.138 Mc. Frequency checks are given two nights weekly, and the times are announced during the broadcast. 7065 Kc. channel is used from 1000 to 1030 hours each Sunday as VK4 service to VK4WI.

VK5WI.—Sundays, 1000 hours SAST, on 7196 Kc. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Mc. bands.

VK6WI.—Saturdays 1400 hours, Sundays 0930 hours WAST, on 7196 Kc. No frequency checks available.

VK7WI.—Second and Fourth Sundays at 1000 hours E.S.T. on 7196 Kc. No frequency checks are available.

VK3XX (1)	..	..	..	39	135
VK4EL (10)	..	..	..	39	134
VK3ADE (28)	..	..	..	123	
VK3OP (19)	..	..	..	128	
VK3AHA (9)	..	..	..	40	123
VK2NS (16)	..	..	..	39	122
VK4KS (24)	..	..	..	36	121
VK3GD (22)	..	..	..	119	
VK4DO (15)	..	..	..	38	118
VK3FL (16)	..	..	..	36	116
VK7LZ (22)	..	..	..	119	
VK4RO (21)	..	..	..	38	109
VK2ZO (25)	..	..	..	38	108
VK3LN (19)	..	..	..	107	
VK2YL (11)	..	..	..	109	
VK2AHM (20)	..	..	..	105	
VK4UL (27)	..	..	..	33	104
VK3YN (18)	39	102
VK2HEZ (17)	39	102
VK2ACX (6)	40	100
VK3ADT (14)	109	

New Member

VK3LN (29)	107	
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At the time of going to print, VK2DI is Certificate Holder No. 27 of the Empire DX C.C. and the only Australian to receive this honor. From the Rules it is the most difficult of all DX achievements—heartiest congratulations, Gordon.

COUNTRIES LIST

Several reports are to hand that Tunisia's Amateur prefix has changed from PT4 to 3YA, although this is not an official notification of each change. The January issue of "A.R." will contain, as promised, the up-to-date Official Countries List as used by the A.R.R.L. and the W.I.A. for DX C.C. Awards.

W.I.A. ACTIVITIES CALENDAR

Dec. 3-4: Third European DX Cont. (phone).
Dec. 10-11: A.R.C.I. DX Cont.
Dec. 17-18: A.R.C.I. DX Cont.
Dec. 19: Motions for 20th Convention due with Divisional Councils.
Jan. 14-15: B.E.R.U. Contest (C.W. Section).
Jan. 21-22: B.E.R.U. Contest (Experimental Phone Section).
Jan. 28-29: W.I.A. National Field Day Contest; B.E.R.U. Contest (C.W. Sect.).
Jan. 31: Membership Roll of each Division due with F.E.
Feb. 19: Convention Motions due in to F.E.
Feb. 28: Convention Per-Capita due with F.E.; End of Fiscal Year of Divisions.

QUEENSLAND

Secretary—W. L. Stevens, VK4TB, Box 638J, G.P.O., Brisbane.

Meeting Night—Last Friday in each month at the Y.M.C.A. Rooms, Edward Street, Brisbane.

Divisional Sub-Editor—F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Secretary—E. A. Barber, VK5MD, Box 1234E, G.P.O., Adelaide.

Meeting Night—Second Tuesday of each month at 17 Wymouth St., Adelaide.

Divisional Sub-Editor—W. W. Parsons, VK5PS, 483 Esplanade, Henley Beach.

WESTERN AUSTRALIA

Secretary—W. E. Coxon, VK6AG, 7 Howard St., Perth.

Meeting Place—Padbury House, Cur. St. George's Ter. and King St., Perth.

Meeting Night—Watch the Monthly Bulletin.

Divisional Sub-Editor—George W. Ashley, VK6GA, 83 Mars Street, Carlisle, Western Australia.

TASMANIA

Secretary—R. D. O'May, VK7OM, Box 371B, G.P.O., Hobart.

Meeting Night—First Wednesday of each month at the Photographic Society's Rooms, 183 Liverpool St., Hobart.

Divisional Sub-Editor—Capt. E. J. Cruise, VK7EJ, Anglesea Barracks, Hobart.

Northern Correspondent: C. P. Wright, VK7LZ, 3 Knight St., Launceston.

WIRELESS DISTRESS CALL METHODS

It is desirable that all Amateurs in Australia should be "Au Fait" with Distress Call Methods used by other services so that in times of emergency, the Amateur may further prove his usefulness to the community. A recent R.A.A.F. Bulletin describes the methods to be used for R.A.A.F. and civil aircraft in distress. Briefly they are as follows:

500 Kc.—This is the main International Distress frequency and calls would be made particularly between silence periods of 15 to 18 minutes and 45 to 48 minutes past each hour. The calls are to be observed by all ships and other stations with careful listening for distress calls. Most aircraft carry the Gibson's Girl transmitter which operates on 500 Kc. In addition, twelve 4-second dashes at one-second intervals which operate the alarm system of ships and coast stations, can be transmitted. Later models of the Gibson Girl operate alternately on 500 and 8280 Kc.

3805 Kc.—This frequency may be used at night in some parts.

6500 Kc.—This frequency may be used by day in some parts.

6340 Kc.—This is a generally recognised h.f. International channel for distress calls. This channel will be most used if an aircraft makes a forced landing on land, and signals will go out at regular intervals until rescue is effected.

Various.—The usual aircraft frequencies may be used if it is possible in the time available to send out distress calls on the working frequency predating with the appropriate SOS, Mayday, XXX or PAN.

Procedure.—If an aircraft is believed to be down on the sea, listen on 500 Kc. and 8280 Kc. These signals will be weak and may best be heard during the silence periods.

If the aircraft is believed down on land, listen on 6540 Kc.

Action.—Any Amateur hearing signals on any of the above frequencies, should follow the procedure outlined in the P.M.G. Handbook for Operators of Wireless Stations or get in touch with the nearest R.A.A.F. or Aeradio Station without delay.

AMATEUR CALL SIGN CHANGES

Efforts are being made to again present this feature, so that our new call books will not become

redundant in a short time. Staff shortages have become the present reality, but it is hoped that we will soon be able to print monthly lists as of yore.

PHONE-C.W. ALLOCATIONS OF N.Z.A.R.T.

Following communications between the W.I.A. and the N.Z.A.R.T., the N.Z.A.R.T. have advised as follows:-

3500-3550 Kc.—Application to their P. & T. Dept. for 14132 Mc. and we have been asked to 7000-7030 Kc.—Already whole band entirely c.w., and no phone allowed. As VK phones interfere considerably, we appreciate the fact that phones abiding at least by our gentlemen's agreement."

14000-14100 Kc.—Their present c.w. allocation is 14132 Mc. and we have been asked to consider extending our c.w. portion to 14150 Kc. in line with the Canadians.

21000-21150 Kc.—No comments on our proposal at this juncture.

28000-28100 Kc.—Ballot has shown the majority in favor, but has not yet been taken up with their trying to get on the air.

In view of the above, we urge all VK Amateurs to follow the voluntary agreement agreed to by the Divisions and as laid down in a recent Editorial, so that we may work in harmony with our ZL neighbors.

FEDERAL QSL BUREAU

RAY JONES, VK9RJ, MANAGER

Interesting cards sighted during October are those of AC3NC (Sikkim), N. Chakravarti P.O., Gangtok, Sikkim State, via Siliguri, India; F. 8AD (French Indochina), via Saigon, Indochina; and 2YUJYL QSL address as Box 6666, Bombay 20; and 2YUJYL QSL, address complete with the owner's photograph on the obverse.

Attention is directed to the unique conditions attaching to the first International DX Contest organised by the Amateur Radio Club India. The rules for the contest are as follows: 10-11 and 28 Mc. only and which covers the weekend Dec. 10-11 and Dec. 17-18, appear elsewhere in this issue. This contest should be extremely interesting.

Ray Jones, VK9RJ, Manager of the Radio Society Southern Rhodesia, gives the address of their QSL Bureau as Plumtree, Southern Rhodesia. John VQJQCZ, states he has now completed his terrific task of sending out 100 per cent. QSLs. Any station who has not yet received a card for contact with his station should write to him.

241B writes c.w. and receives 221B. In contrast to our "moist" w.r., sends 73 to all his VK-ZL friends and "mas cheer. Jim hasn't been on the air much except for a 100 per cent. QSL. I see an electrician at a hydro station where the third 62,000 h.p. unit is being installed and has been somewhat up and down in a mountain path. I'm back in the bush from Vancouver where a river is taken through a mountain by a tunnel. QRM from 28,000 volt lines is mostly R max. so DX is impossible to get on 30 and 10, so you may hear him on a VE call.

NEW SOUTH WALES

The October meeting of the N.S.W. Division was held at Science House, Sydney, on Friday, 26th October, 1950. Attendance was rather meagre, which was unfortunate for those who did not attend, since they missed something really good in the presentation which was delivered by Mr. Angus Robertson, M.C., D.C.A., his subject, "Antennas and Feed Systems." Certain fallacies and long-cherished theories in the sky-wave business were exploded in an unimpaired manner. The presentation by Mr. Robertson, dealing with this matter, will be published in "A.R." shortly. The meeting concluded at 1.45 P.m.

EASTERN SUBURBS ZONE

It is with regret that I have to acknowledge the presence in the Eastern Zone of several blights, the most prevalent being that of "rotary fever"—beam type, which seems to be keeping quite a few of the boys out of the air. The "rotary fever" is a coming boring, would the phantom please do up a few notes for the zone instead of adopting these mystic rites. It is to be feared that we may have to work for a living and not get around too much, we are unable to give the chaps in the Rose Bay, Vaucluse and Watson's Bay areas as much attention as they deserve—will somebody in those areas please contact 2AX, via PW 7053 and pass along the dope?

2K1B heard at 200 times on phone with good quality. 2TN on vacation in VK3 and doing his best to shoot through with some c.w. 2QG suffered a shock when a W told him that he was 10 db over 50 and still doesn't believe it. It is a pity that you never know just what you can do until you are pushed into it. 2YF suspected of connection with the "rotary fever" and therefore had to make all other beams obsolete and therefore had to hit the air. 2FJ making progress with the tower, at last sight was up about twenty five feet and fast

becoming a Bronze landmark. Jack bot crashed too much or late except to mark out the crash way the weather is preventing work on the tower.

2AZH whispered that somebody saw a long 5 x 5 pole moving in the direction of the tower. 2AFZ thoroughly occupied testing 80% in p-p good luck. Eric, 2AX still in the throes of rebuilding. Heard his XLV plaintively appealing to 2M for 2AIG to permit 2AX to get his rig finished so she can find room for her new fridge and do a spot of cleaning. 2AIG busy building a house for 40. K.C. has been on that beam. RCR wants some of the locals to start 50 Mc. and about it, chaps? It is the brightest idea that has hit the air in our zone for some considerable time. It only wants someone to start it and it will be a popular band for local rag-chews. How about it, YOC!

NORTH SHORE ZONE

Delete all reference in last month's notes on 2N1's 10 over 20 beam. The "10 over" isn't there, but the net is, and functioning very well. 2TL is still plugging away at the final—this rebuilding certainly takes more time than estimated. 2XND about to burst forth into the ether at last. He's moving things indoors, so will probably run his QRM for a while. 2YUJYL has been on the air and then racing down to the house to turn on the receiver! 2XM has been chasing a slice of DX at his terms firm QTH in between voyages.

2YF has made some headway at last but doesn't know yet if it's genuine or not—the weird 3V8AG, who assured him that 3V8 is the best rig for PT4. 2YUJYL's keeping those fingers crossed until the early arrival. Nice work by 2AH and 2ARG in reaching JA on six—how about a key in that rig, Alan? 2AMB climbing aboard on his hunt for a new home. 2YUJYL will be long now. 2ZH has severed connections with his old stand in the city—Sydney won't seem the same. 2YUJYL finished very little time for hamming now, his new family is building a house, keeping him busy. Will hear him in a new QTH in under twelve months, if all goes well. 2AM has discovered that his tube runs hot, even if R.C.A. says they are!

WESTERN ZONE

The western gang have apparently been bitten by the v.h.f. bug. 2VH has 50 Mc. gear going also new rotary on it. 2ST has also finally made 10 with 3 element rotary. 2AMV has phone going well on 20 and 40, has 40 odd countries up, not much on 20 new. 2AFZ putting out good signal on 40 and is building 144 Mc. gear. 2AMR has re-built all his transmitters, works all bands 3.5 to 30 Mc. 2JW and 2ALX work each other across the zone. 2YUJYL has been on 20 and 40. 2X has also removed the bugs from his 40 metre gear. 2XP has phone on 40 and raised the 10 m beam to 30 feet. 2JC still mostly on 80, but heard occasionally on 40. 2NS put up a new rotary on 20 now and again, building a rotary quad to replace the 3 elements on 10. 2ACU heard using 10 m. 2EJ with battery power gets it well on 40. V.H.F. man 2IY, just packed all his gear away before the K.H.s came through, better unpack it. Stan, 2LW heard on 40, has a new home site selected, better QTH too. 2EX from Newcom Junction has arrived at Springwood to worry 2HZ, but won't be on for a while. 2HZ very pleased with a new 5JZ. 2EF seldom operates these days.

HUNTER BANCH

A very successful meeting of the Hunter Branch was held at the Technical College, Tighes Hill. New members were welcomed and presented with their new membership cards. A number of the new boys joining immediately now we have a Northern Branch. Almost 100 per cent. W.I.A. in the North now. An interesting discussion took place on the last A.G.C. meeting. Paper wonder if all the old gang would pass the present day paper?

Our President, 2CS, has been resting after working all that nice 10 m European DX—guess the shock was too great for so many years. Bill 2CWC very QRL with new job, have heard he may be giving up the Secretary's job due to shift work, certainly hope not, as Bill has put a lot of valuable work into the running of the Branch. 2NX has been very frequently heard, not much to write about flying—getting preference over Hm Radio.

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2UY not heard for the month, giving the game a spell and getting too much out of his rig. 2AGY goes nice signals on 20 and 10, very unhappy about noisy Coker's Hill, manages the DX though.

2YUJYL has been on the air for some time for months, hope recent illness has disappeared. 2OS been keeping Thornton on the map using 50 Mc. Worked the Mountains, 50 watts to an 807 on 20.

While on the v.h.f.s. Dave 2BZ has a nice rig on 20, 80 watts to an 829, makes lots of Sydney calls for DX C.C. 2AFS has terrific signal on 10, luck to 2ABT in Cosmoack as yet. 2IF works lots of 20 and 40. 2G and 2S9 reports. 2FP has 116 countries up on 10 phone post-war, only wants 10 cards for DX C.C. 2AFS has terrific signal on 10, using 95 watts he tells me, his compressor works well too. 2FT getting some new countries on 20 and 40. 2YUJYL has been on 20 and 40. 2YUJYL still pounding brass and doing well too. The back card of 10 m. boys and 20 m. boys, perhaps they hear one another?

Associate Bert Watts passed the last examination, so there will be more QRM around Birmingham Damans. Believe Harry Fittos also passed his exam. work. Can 2XY rag-chew on c.w., at tea time was heard (QSO a VK); was still going at 11 p.m. still has DX trouble, still making no noise. If he have a good effort in contest, looks like if we have a 10 convert in Jim 2LV back on 40 hope to hear more of you. Associate Gordon Sutherland still has DX trouble, still making no noise. On 40, worked a few stations in the c.w. section of the contest. Most important news from Matland is that 2XQ has been coming in. Hunter Valley emergency net—just the same. 2YUJYL has had lots of operating and administrative experience. 2DYG finished the contest with a great score, something like 74 countries on 10 aigue—conditions not being the best either; very solid on 10 in Newcastle.

2JZ still finds time to work 10 phone and puts a nice signal into Europe too. 2TY on 10 sometimes puts a signal into and works Newcastle on 2. 2ABX has plenty of punch on 6, was heard talking about DX trouble, still making no noise. Some dope Jack. 2AKP must be "snowed" in with these hot days, like to see you across the street Vic. Associate Charlie Hunt will have his ticket soon so we will hear another Ham from Matland. Things quiet around Birmingham G. George 2AGD put up good score in 10 phone section of the contest, believe it or not. 2YUJYL, who experienced better conditions, may pip George for 1st place. 2AHA has settled into new QTH, no beams up as yet, but an old sepp has managed to get on 20 and 40. 2YUJYL is 80 on the sepp, so the QTH looks good. What about some news from the silent blobs, write or rag 2AHA.

COALFIELDS AND LAKES

At the time of writing, news from the Lakes has not arrived, so notes from that area will be brief. Major 2RTU is hearing some DX on 50 Mc. and is also prominent on 144 Mc. Jack 2ABT is keeping an ear for 50 Mc. DX, but so far nil heard. Has 144 Mc. rig completed and working 2XZ in Sutherland. Seems as if the v.h.f. will be Jack's hunting ground for the summer. Geoff 2VU working 80 m. has nice mast and rotary on the latter band, also has the habit of hearing the rare things. Nothing heard of 2JZ. Bob 2YL is now a regular c.w. man with 10 m. and 20 m. occasional DX activity. 2YUJYL has signal on 144 Mc. too.

2KPF always seems to be building something and is putting out nice phone too. Max 2KZ's phone is still going good, he's rebuilding working 6 m. and can be heard chasing Ws on 10. 2YUJYL goes well on 10, should have a beam up soon. 2ALR, a new Ham in Cosmoack, is getting on gear together and has already worked a few of the top max gang. No activity from 2PZ or 2MK and 2YUJYL fairly QRL, but should be breaking out on the DX soon.

SOUTH COAST AND SOUTHERN

2XD and 2SC called in to work up to the big smoke. These two gent's were very impressed with the set-up at 20J at Albany. 800's car was equipped with a Type A Mark III, series cathode mod. and has already worked a few of the top max gang. 2AID and 2BW heard with very good sig-



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Mr. Arnold Wolff gave the long awaited lecture on the equipment used in the Lupeostock two-way radio equipped station on the September meeting. This was installed in a fleet of taxis by Philips (Aust.) Ltd. so that a base station could keep in constant touch with the cars and so direct them from one call to another without the necessity of the car reporting back to base. The advantage of such a system are too numerous to mention and the description of the equipment used made a very interesting lecture.

Evidently the present trend in the zone is away from DX and the lower frequencies because at present 140, 7MB, 7TE, and 7TF are either building, or have just completed, 144 Mc. crystal controlled transmitters.

The only active stations on the lower frequencies at present are 7RK, 7LZ and 7RB, the latter station operating on telephony only.

This portion of the year could easily be called the Contest season. Last month I commented on the first week-end of the VK DX Contest. If conditions were as bad elsewhere as they were here for the remaining periods, the least said the better.

The telephony section of the CQ Contest has just concluded. Judging by the interest shown by overseas stations, this is certainly going to become one of the leading DX Contests in the world.

Conditions, although erratic, showed a decided improvement over the previous week-ends and all continents were heard continuously. The major breakthrough appeared to be east and west and it was surprising the number of good signals from the Central American countries. Outstanding amongst these were 7T2HP, XE1A, XE1AO, YN10C, HA6AOF, 7T10E, HP17S, and HP10LO. YK1AO in Denmark gave several VKs and Zls a new country.

Naturally all members were very keen to hear that Tasmania had been won by the R.D. Award. Who will have the trophy twelve months from now remains to be seen, however, judging by the reports heard during the Contest period, all those competing had a grand time and next year's battle should be the best yet. Our congratulations go to EPA, 7KB and 6RD for their magnificent scores.

One disappointment was the large number of non-eligible entries from all States. VK7 appeared to have a few people, judging by the other States were also checked. This gave the rather astonishing percentage figures shown. VK3 25.5, VK8 26, VK4 21.7, VK5 18, VK6 29.5, VK7 20.7. This last goes to prove that near enough is not good enough for the judges. The winning State will require to do better than this next year.

The November meeting of this zone is to be a business and general discussion evening, so all members are requested to attend. Bring all your bright ideas and be at the King's Hall at 8 p.m. on Friday, the 9th of December.

CORRESPONDENCE

The opinions expressed in these letters are the individual opinions of the writer, and do not necessarily coincide with those of the publishers.

R.D. CONTEST

Minden, via Rosewood, Queensland.
Editor "A.R." Sir,

The 1949 R.D. Contest has been decided and heartiest congratulations to VK7. I was very interested in the score board published in the November issue and worked out the following interesting percentages:—

	VK2	3	4	5	6	7
Percentage of participants who sent in logs	41	38	45	55	89	90
Percentage of eligible logs	75	71	79	84	80	80
Percentage of licensed Hams taking part	16	13	16	16	25	33

Now it was stated that the new multiplier would appear to make it impossible for the larger States to win the coveted trophy. I do not agree with this statement. VK7 had one-third of its licensed Hams taking part. If the last State on the list, VK3, had had one-third of licensed Hams taking part and had 80 per cent. of these send in eligible logs (as was the case with VK7), the VK3 multiplier would have been 0.26. Score for VK3 then would be 507.7 x 0.26 equals 80, and the winner.

Therefore I do not believe that the reason that the larger States did not win is any fault in the multiplier system. The fault lies with the States themselves. Each State must awaken greater interest in the R.D. Contest and get a great percentage of licensed Hams to take part, and must also get a considerable increase in the ratio of logs sent in to participants.

It is also noticed that of all licensed Amateurs in VK, only 16 per cent. took part—why?

The Remembrance Day Contest is an all Australian Contest and is held to remind us of those Hams who made the ultimate sacrifice. Is it asking too much for Hams of Australia to take an active part in such a Contest?

—F. H. SHANNON, VK4XN.

OPERATING SUGGESTIONS

65 Railway St., Traralgon, Vic.
Editor "A.R." Sir,

QRM on various bands is frequently very objectionable. On 40 metres, at least, I think it could be cut down considerably in the following ways:—

- (1) Never reply to a CQ call which is QRMED.
- (2) If a station answering a CQ is QRM, request him to shift to a clear channel before continuing QSO.
- (3) Also a single frequency (preferably outside the band!) for those Amateurs who, lacking a dummy antenna, are forced to whistle, test, count, or otherwise clutter an already crowded band. Alternatively, restrict such tests to the period 2 a.m. to 5 a.m. or thereabouts.

Hoping these suggestions will find some favor, and discourage careless or selfish operators.
—H. REID, VK3RIL.

TO OPERATORS OF SLOW MORSE TRANSMISSIONS

Cape Conedie Lighthouse,
Kangaroo Island, S.A.

Dear Sirs,
I have just received advice to the effect that I was successful at the October examination for the A.O.C.P. I therefore wish to take this opportunity to thank you for the part you played in bringing this benefit to me.

Although it is the duty of Lightkeepers to be proficient in visual signals, it is a far different matter when it comes to sound, and had it not been for these practice sessions, I would never have got through as well as I did.

So once again I extend my heartiest thanks and congratulate you on the fine job you are doing. Keep up the good work as there is possibly much more like me.

—A. W. WINTER.

ABSTRACTS FROM OVERSEAS MAGAZINES

"Single Sideband for the Average Ham," W. M. Rust, "QST," August, 1949, p. 47.

The simplest s.s.b.c. rig yet seen. Uses the phasing method, but does away with as many tubes as possible (leaving only six).

"Simplicity On Six," E. P. Tilton, "QST," August, 1949, p. 40.

4AG7 oscillator-doubler with 26 Mc. crystal, 829B amplifier with 100 watts input.

"Technical Topics," "QST," August, 1949, p. 32.

Adjusting the antenna coupler and harmonic filter for best results.

"A Power Distribution Panel," B. B. Boss, "QST," August, 1949, p. 30.

Some thoughts on neat ways of handling the 40 m. end of the rig.

"The Coffee Can V.F.O.," E. Hayward, "QST," August, 1949, p. 22.

8VA Clapp oscillator on 80 metres driving 6V6 untuned buffer.

"Noise Generator," "Technique for the V.H.F. Man," E. P. Tilton, "QST," August, 1949, p. 20.

Noise generator for 28, 80 or 144 Mc. One of the most useful gadgets a v.h.f. man could have. Uses a 5722 tube.

"A Super Interlocking Beam for 10 and 20 Metres," A. Usher, "QST," August, 1949, p. 17.

Four elements on 10 metres and three elements on 20 metres, mounted on the same boom.

"A 25 Mc. Installation for the Car," G. P. McGlen, "QST," August, 1949, p. 11.

5230 crystal oscillator, 252A amplifier, modulated by p.p. 22E06. Discussion on the best means of control, antennae, etc.

"Crystal Ball For Your Mobile Rig," G. M. Brown, "QST," August, 1949, p. 6.

A combined S meter, carrier meter, and modulation level indicator.

"Oscar II," W. A. Sperry, "CQ," August, 1949, p. 24.

An improved audio milliamper, volt and ohm meter for the sightless Amateur.

"A Quick Change of Pace for the Prop. Pitch Motor," D. Saunders, "CQ," August, 1949, p. 20.

By eliminating one of the gear reductions, the control gives a 100 r.p.m. with 9 v.d.c. a.c. on the motor, which quickly ticks over at about 1,000 r.p.m. Very full instructions and photographs for performing the necessary operation.

"Tone Modulating the BC221," J. E. Pihls, "CQ," August, 1949, p. 13.

Uses the existing tubes to produce RC oscillations.

"A V.F.O. for the Mobile Rig," J. Grimes, "CQ," August, 1949, p. 11.

850 m.c. electronic coupled v.f.o. on 7 Mc. Emphasizes on small size and rigid construction.

"The Attie Ambler," P. F. Lucas, "Short Wave Magazine," August, 1949, p. 458.

An indoor aerial for 7 Mc. which wanders about in all directions under the foot. Seems to radiate equally well in all directions.

"Triode Converter For Two," W. J. Crowley, "Short Wave Magazine," August 1949, p. 442.

636 push pull r.f., 636 push pull mixer, 636 push pull oscillator. Gives noise figure of 4 db which is approx. 6 db better than a 6AK5 r.f. stage.

"Practical S.S.B. Driver, Part II," H. C. Woodhead, "Short Wave Magazine," August, 1949, p. 425.

Continuation of description of s.s.b.c. rig using a balanced modulator to remove carrier and a filter of the crystal gate type to remove the unwanted sideband.

"Beam Design and Adjustment," W. A. Sparks and S. Leigh, "Short Wave Magazine," August, 1949, p. 422.

Full information on 2, 3, 4 and 5 element beams. Gives dimensions, gain, radiation resistance, angle of radiation, front to back ratio, etc.

"Double Superhet For Ten, Part I," A. B. Wright, "Short Wave Magazine," August, 1949, p. 412.

6AG5 r.f., 6J6 mixer-oscillator, 1st i.f., 1,500 Kc., 2nd i.f., 465 Kc., 8 meter, noise limiter, etc.

"Your First Transmitter," R. L. Parmenter and C. E. Clark, "Radio and Television News," August, 1949, p. 26.

Two valve c.w. transmitter for 80, 40 and 20. 6C4 Pierce crystal oscillator, capacity coupled to 807 running 60 watts input. Provision for break-in operation.

"A Cathode Follower V.T.V.M.," E. J. Schultz, "Radio and Television News," August, 1949, p. 52.

A single tube and 0.5 Ma. meter measures up to 1,000 v. d.c. at 12 megohms input resistance and measures resistances up to 100 megohms with a 1.5 v. d.c. cell.

"Crystal Controlled Portable V.H.F. Transmitter," R. B. Toner, "Radio and Television News," August, 1949, p. 34.

Design of dry battery transmitter for 144 Mc. to have the least current drain per watt output. 8 Mc. crystal operated on third overtone by half 3A5. Other half of 3A5 drives to 48 Mc. 3B4 tripler to 144 Mc. and drives another 3B4 as straight amplifier.

"A Low Power Rig for C.W. or F.M. Phone," O. L. Woolley, "Radio and Television News," August, 1949, p. 48.

The circuit is conventional and straight forward. Tube line-up is 6SL7, 6AR5, 6X4 and 12A6 oscillator, 12A6 buffer doubler, and 807 final. The v.f.o. is modulated for f.m. by the resistance variation method (loop modulation to old timers).

"High Gain Directional Array for Marginal T.V. Reception," L. E. Greenlee, "Radio and Television News," August, 1949, p. 28.

Full details for constructing a five element beam consisting of folded dipole, three directional, and a reference, all elements given for frequencies in the range 54-216 Mc. and appropriate formulae are given to calculate element lengths and spacings for other frequencies.

A.R.C.I. DX CONTEST

(Continued from Page 14)

6. The contest will extend from 0730 hrs. G.M.T. Saturday, December 10 to 1830 hrs. G.M.T. Sunday, December 11, 1949, and from 0730 hrs. G.M.T. Saturday, December 17 to 1830 hrs. G.M.T. Sunday, December 18, 1949.

7. For the purpose of this contest, stations located in India, Ceylon, Burma, and Pakistan will be considered as local stations and in one zone. The rest of the world will be divided into zones according to their country prefix list. An entrant not located in one of the prescribed prefix zones shall be considered as being in a prefix zone nearest to his station.

8. Bands.—Only 14 and 28 Mc. Amateur Bands will be used.

9. Code Groups.—All entrants will exchange a five figure (phone) or six figure (c.w.) groups with the contest stations. The first two (for phone) and first three (for c.w.) figures will denote the signal report in RST and the last three, the serial number of the station contacted, e.g., for the eighth phone contact, your number will be 99080 (assuming that his signals are R5 89 at your end) and for the two hundredth c.w. contact your number will be 59920, etc. The exchange of these groups is essential for claiming points.

10. License.—Conditions laid down in the entrant's license must be observed.

11. Band Monitoring.—Special band monitoring stations under the auspices of the A.R.C.I. will be active in the contest. Any station reported off frequency by these stations will be disqualified.

12. Scoring.—(a) Contacts with, or reports from, ships or unlicensed stations will not count for points.

(b) Only contacts with stations located in other than the entrant's zone will count for points.

(c) Only one contact with a specific station may be made on each band during each week-end of the contest; stations contacted during the first week-end may be contacted again during the second week-end for points.

(d) Twenty points will be awarded for the first contact on a specific band (i.e. same station may be contacted on 14 Mc. and 28 Mc. bands and 40 points scored). Nineteen for the second contact, 18 for the third, and so on down to 1 point for the twentieth contact, in each zone, i.e. contacts with different zones will count separately for points so that for the first contact in each zone you can claim 20 points).

(e) A bonus of 350 points will be awarded to any entrant working all zones during the contest.

(f) A bonus of 1,000 points will be awarded to any entrant working all zones twice during the contest.

(g) A bonus of 50 points will be awarded to any entrant working all countries during the first week-end.

(h) A bonus of 150 points will be awarded to any entrant working all countries once during each week-end.

13. Log.—All entrants must forward a log sheet recording their contacts, as their entry form. The log should contain the following information:—

(a) heading showing (i) Name of entrant; (ii) QTH of entrant; (iii) Call sign; (iv) Details of Tx; (v) Details of Rx; (vi) Details of antenna; (vii) A signed declaration as follows:—"I hereby certify that my station was operated strictly in accordance with the rules of the contest, and I understand and agree that the decision of the A.R.C.I. Contest Committee shall be final in all cases of disputes."

(b) Body, giving following information: (i) Date; (ii) Time of contact G.M.T.; (iii) Band; (iv) Call sign of the station contacted; (v) Five or six figure group sent; (vi) Five or six figure group received; (vii) Prefix zone; (viii) Points claimed.

CLASSIFIED ADS.

Advertisements will be accepted under this heading from the trade, and/or individuals who are active engaged in trading as a livelihood. Rate: 15/- per inch.

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100 and 1,000 Kc. genuine G.E. vacuum mounted crystals, 0.01% accuracy, brand new; suitable for Bendix Meters and other instruments. £5/5/- plus sales tax (8/9) each, posted. R. H. Cunningham and Company, 62 Stanhope Street, Malvern, Vic. UY 6274.

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HAMADS

9d. per line, minimum 2/-.

Advertisements under this heading will only be accepted from Institute Members who desire to dispose of equipment which is their own personal property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line.

FOR SALE.—Bendix TA12 Transmitter, power supply and modulator. Converted for 10, 20, 40 and 80 metres. First class order. J. F. Anderson, Nullawarre, Victoria.

FOR SALE.—Converted 11 valve BC348Q Receiver, noise limiter, crystal filter. Two new 35Ts, one 25T, one converted BC454 (6-9 Mc.). W. Wells, 23 Waterloo St., Camberwell, Melbourne. Phone WF 7132.

FOR SALE.—Kingsley S9er and coils, 6, 10, 20 metres with 6AK5. £6/10/- Also 802, new. £2/5/- Sat. or Sun. afternoon. W. Stevenson, 11a Maud St., Ormond, Vic.

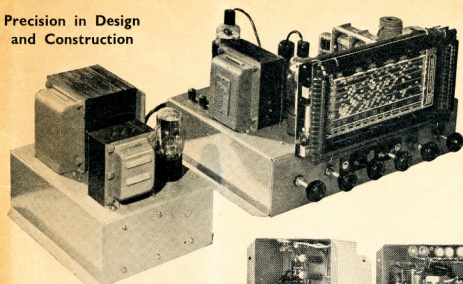
WANTED.—Plugs and cables for connecting Bendix RA10FA Receiver to remote control unit. K. Semmler, Box 26, Murtoa, Victoria.

WANTED.—TR1143A Service Manual required urgently. Bennett, Lilydale, Victoria. Phone 98.

WANTED.—Will pay 10/- for May or October 1940 issue of "QST." G. Milner, 18 Ward St., South Melb., Vic.

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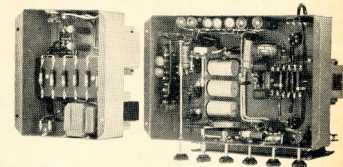
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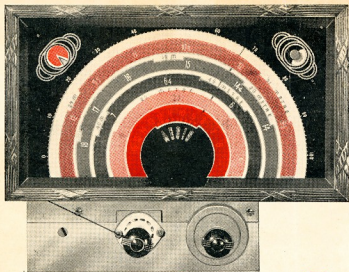
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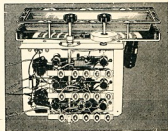
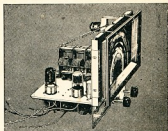
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